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Chapter 1
Water Plan Overview

Importance of Water to California's Well-Being

California water planning and management requires full and balanced consideration of the State's richly diverse people, environments, businesses, land uses, climates, geology, and variable hydrology. Diverse and variable water uses are distributed throughout the State and over time, which do not coincide with natural water supplies.

With more that 36 million people, California is the nation's most populous state and the third largest in size. All aspects of the California economy are dependent on water. Together with the abundant natural resources and business opportunities, the people have made the State's $1.4 trillion economy the fifth largest in the world. Electronics, aerospace, banking, the film industry, and recreation are only a few of the businesses that make California a unique economy.

Providing food and fiber crop products to Californians, as well as to other states and countries, consumes, and will continue to consume, more water than is consumed by all other household needs. California is the top-ranked state in the value of agricultural production, contributing over half of the nation's fruit, nut, and vegetable production. Many counties rely on agriculture as a primary economic contributor.

California has experienced aquatic and riparian habitat degradation and declines in freshwater biodiversity throughout the State. Flows on many rivers and streams currently do not resemble natural hydrographs, which is a contributing factor to impaired ecosystem functions, reduction and loss of native species and habitats, impacts on commercial fisheries, and degraded water quality.

Transporting water is the largest user of electrical energy in California, which has both economic and environmental implications and impacts. At the same time, hydroelectric power produces a significant percentage of the State's total energy. Water management activities that consume energy comprise a large percentage of the State's total energy consumption. Hydroelectric-producing reservoirs and forebays provide flexibility that allows consumption during off-peak demand periods and production during peak demand.

As a result of increased competition among water uses, management of California's water system has become increasingly challenging, complex and at times contentious. However, water issues are being resolved with leadership from the State and federal governments and through partnerships with local and regional stakeholders. Local, regional, and State governments and water suppliers each have a role in improving water supply and quality reliability for the existing and future population and the environment.

Water conservation, efficient water management, and development of reliable, high quality, sustainable, and affordable water supplies are needed to maintain and improve California's economy, environment and standard of living. Today, regions are doing more to meet there water demands with water use efficiency, recycling, groundwater storage and management, transfer programs, and in limited cases regional or local surface storage reservoirs.

Changing the Water Plan

Water plan updates have always been an important source of information for water planners. The first California Water Plan was drafted as a master plan for managing and developing California's water resources. Over the decades it has been updated periodically with revised estimates of both future water demands and the delivery capability of existing and planned facilities. The difference between those estimates of water demand and supply, sometimes called "the gap," became an often cited detail of the water plan updates—typically used as a rallying call for action (See Box 1-xx Updates of the California Water Plan).

Box 1-xx Updates of the California Water Plan (Bulletin 160 series)

In recent updates, the gap estimate has been widely criticized for a number of reasons, including the assumptions used to estimate future water demands, the minimal consideration of economics, and the lack of consideration of multiple scenarios for both what future demands might be and how those demands could be met. As a result, many have argued that the gap is too high or too low, and few accept it as just right.

California water management has changed significantly over the past decades. State and federal projects have not expanded as originally expected; in fact, deliveries have been curtailed in recognition of environmental needs. In response, regions have done more to meet their water demands through water use efficiency, recycling, groundwater management, transfer programs, and in limited cases regional or local surface storage reservoirs.

The Water Code, revised by recent legislation, requires that as part of its California water plan update, the Department of Water Resources incorporates a process that (1) establishes and confers with an advisory committee composed of representatives of agricultural and urban water supplies, local government, business, production agriculture, and environmental interests, and other interested parties, and (2) creates and conducts an open process, providing opportunity for the public to review and comment on the plan and the assumptions and estimates used in its development. A table is included in the Reference Guide (Volume 4) describing how and when DWR will meet these Water Code requirements during the phased work plan for completing this update (see Phased Work Plan in this chapter).

Box 1-xx Legal Requirements for California Water Plan

In January 2001 the Department of Water Resources expanded the public forum for preparing the California water plan by including a 65-member advisory committee, a 350-member extended review forum, and a group of 2,000 interested members of the public. The advisory committee is composed of representatives of agriculture, urban water districts, businesses, environmentalists, Native Americans, environmental justice advocates, cities, counties, federal and State agencies, the California Bay Delta Authority, academia, and different regions of the State.

To continue to be a focal point for California water policy, the process for developing the water plan update and the information it contains must change—and is changing. *California Water Plan Update 2004* is a strategic planning document that better reflects the roles of the State and the growing role of regionally based integrated resource planning in California water management.

Purpose of this Water Plan

California Water Plan Update 2004 provides decision-makers, resource managers, water suppliers, and all water users a strategic water plan for the next quarter century with specific goals, objectives, findings, and a robust set of recommended actions. This plan:

- Presents durable and achievable actions that, if implemented, will assure adequate, reliable, affordable, and sustainable water of suitable quality for all beneficial uses to the year 2030.
- Recommends ways to assist and support local and regional planners to develop integrated resource plans, implement diverse management strategies, and coordinate land use planning with water planning and management.
- Recommends ways to strengthen the State of California's leadership, coordination, oversight, and public investment to protect, manage, and develop the State's water resources as a public trust asset and to maintain its water infrastructure.
- Articulates the costs, benefits, tradeoffs, and implementation difficulties of the recommended actions to help decision-makers and resource managers make informed decisions on the mix of strategies best suited to their needs.
- Outlines a process to improve data and analytical tools to make future water plan updates more precise and improve public access to water information.
- Identifies needed investigations and research and development of promising technologies.

It is noteworthy that by statute the California Water Plan cannot mandate actions nor authorize spending for its recommendations. As a strategic plan, *California Water Plan Update 2004* does not make project-specific or site-specific recommendations and, therefore, does not include environmental review and documentation as required by the California Environmental Quality Act. Consequently, policy and lawmakers must take further action to provide public funding and to adopt the actions recommended in this water plan. This underscores the need to have broad stakeholder and public participation and support for the water plan if its recommendations are to be realized.

Key Features

With assistance from the advisory committee, DWR developed a new planning framework for preparing this and future water plan updates. This new framework is one of the significant accomplishments of this Water Plan and should serve as the cornerstone for future updates The framework differs from prior water plans in the following key ways:

- The Water Plan was prepared using a *strategic planning process* that: (1) considerably *expanded public involvement* and access to the State's water planning process; (2) sought *collaborative recommendations* that are more robust, have greater longevity and are more likely to be adopted by the Governor's Office, Legislature, State, federal and local agencies and governments, and resource managers; and (3) resulted in *a strategic plan, which is a living document* with stated goals, objectives, and implementation plan, including progress tracking, indicators and reports. Public outreach and involvement during the preparation of the plan is described in the Reference Guide.
- State and regional *water portfolios* cover the entire hydrologic cycle consisting of more than 80 categories of water use, supply, and management. Actual data are used for three recent but different water years—1998 (wet); 2000 (average), and 2001 (driest since extended drought). Prior water plan updates reported the developed water supply, reporting about 35 categories using trend based (or normalized) data to represent a typical average and typical dry year.
- In compliance with SB 672 (Machado), California Water Plan Update 2004 has a *regional report* for each of the 10 hydrologic regions as well as the Mountain Counties and the Sacramento-San Joaquin River Delta. Each report includes major challenges, current programs and projects, and the regional water portfolios for three years.
- *California Water Plan Update 2004* acknowledges and discusses the significant (and inherent) uncertainties facing California in the next 25 to 30 years by considering three pausible, yet very different, future *scenarios*. Prior water plans considered a single "likely" future. The scenarios are (1) Current Trends Continued, (2) High Resource Sustainability, and (3) Resource Intensive.
- A broad and diverse set of two dozen *resource management strategies* are described to help regions develop more robust water portfolios for meeting future demands while sustaining the environment, resources and economy.

To implement these features, DWR has made, or needs to make, significant analytical changes as summarized in Box 1-xx Analytical Changes.

Box 1-xx Analytical Changes

Key Themes

- **California needs to invest in water conservation, efficient water management and development of reliable, high quality, sustainable and affordable water supplies to maintain and improve California's economy, environment, and standard of living.**

  The recommended actions of this water plan will help California prepare for a total population of approximately 50 million people by 2030 while considering the problems related to extreme hydrologic and catastrophic events, global climate change, maintaining our existing water management system, providing good water quality, eliminating groundwater overdraft,and protecting and enhancing the environment. Failure to plan and prepare for these problems could have significant impacts on California's economy, the standard of living of its residents, and its natural resources. Based on current trends, California's average-year water demand could increase between X.X million and X.X million acre-feet by 2030 (DWR is completing work to fill in this range for the June 7 AC Review Draft).

  The State encourages resource planners and managers to examine all of the resource management strategies to identify the combinations that are uniquely suited to their regional setting and goals and are cost effective, environmentally sound, and socially equitable—in other words, sustainable. The more a region can diversify its water management portfolio, the more robust and resilient it will be in facing future unknowns, and the more it will be able to leverage and utilize its regional assets.

  As California's water use has grown, many local agencies and governments have needed to use many different strategies to manage their water. This diversification has become even more essential with the growing understanding of the concurrent water demands of farms, cities, and the environment. The resource management strategies described in this water plan are the building blocks for future integrated resource plans that local agencies and governments should consider in developing balanced portfolios for their future human and environmental water demands (see "Strategy Investment Options" table in Findings and Recommendations).

- **Regions must play a critical role in California water planning and management to better coordination of water planning with land use planning and urban development and to diversify their portfolio of resource management strategies.**

  Regional planning can improve communication and collaboration within a region, which can provide benefits beyond any specific recommendation in the plan produced by the region. Through a regional plan, a region can better articulate its water management needs to State and federal agencies and elected representatives. Regional plans can also provide a tool for otherwise separate agencies to collectively present regional information that may lead to improved State and federal policies, regulations, and laws related to water supply, water quality, flood control and sanitation that directly affect the participating local agencies.

  The State recognizes the critical role regions must play in California water planning and management and should provide regions incentives and assistance to plan and implement multi-objective, diversified water portfolios, planned to the extent practicable on a watershed basis. The Department

of Water Resources should provide regions with guidance and technical and administrative assistance to support their integrated resource planning. The State pursues legislative and administrative reforms, with guidance from regional planning efforts, to promote integrated resource planning and to overcome regulatory and institutional barriers to effective water planning and resource management.

This Water Plan advances several principles for regional water planning which are listed in Box 1-xx Regional Water Planning Principles and described more fully in Chapter 4 Recommendations.

Box 1-xx Regional Water Planning Principles

- **The State must lead water planning and management activities that: (1) regions cannot accomplish on their own; (2) the State can do more efficiently; (3) involve inter-regional or inter-state issues; and/or (4) have broad public benefits.**

  These activities include, but are not limited to: (1) preparing California Water Plan updates as a public forum to integrate State, federal, regional and local plans; (2) operating and maintaining the State Water Project; (3) providing regulatory oversight to protect public health and safety, including water quality, flood management, and dam safety; (4) participating in major regional initiatives, such as the CALFED Bay-Delta Program and (5) forming public-private partnerships to implement regional programs like the Colorado River Quantification Settlement Agreement. Other State activities are included in the recommendations of this Water Plan.

- **California needs to develop broad and realistic funding strategies and define the role of public investments, to finance needed regional and statewide programs that improve water supply reliability, water quality environmental health, and other water-related resource needs over the next quarter century.**

  Implementing the recommendations of the Water Plan will require significant action and investment by all Californians. Full implementation of all resource management strategies summarized in the Strategy Investment Options Table would require tens of billions of dollars over 30 years. This estimate is consistent with estimates for implementing the CALFED Program. Many of the strategies can be scaled up over time adaptively to meet changing conditions, while others need significant upfront and ongoing financial commitment. Many of these strategies do not have a quantifiable supply benefit, but are necessary for meeting other important water management objectives. The degree of investment indicated in the Strategy Investment Table is daunting in light of California's current economic situation, and does not include funding needed to maintain existing water infrastructure.

  One of the key challenges facing policy makers is deciding who ultimately should pay for the different actions needed to improve California's water management system. Local, state, and federal governments and water agencies all have significant financing and implementation roles. However, it is often difficult to quantify both the benefits and beneficiaries of a proposed project.

  The overarching principle for State funding is to invest in activities that make progress in meeting statewide water management objectives. In order to stretch limited funding, California needs more

regional planning, public and private partnerships, and collaboration on developing better data and analytical tools. The State can facilitate implementation of Water Plan recommendations by providing technical, financial, and administrative assistance. There are several actions the State can take to encourage significant new investment in the management of our water resources using the funding strategies proposed by the Bay-Delta Program and the Commission of Building for the 21st Century as guidance.

The Water Plan recommends that the State lead an effort to identify and prioritize funding strategies to finance regional and statewide water planning, programs, and infrastructure. The State needs to clearly articulate when, and for what actions, to use public investments from State and federal sources. California's water finance plan must also recognize the critical role of local public and private funding based on the principle of beneficiary pays and user fees.

- **California needs to rehabilitate and maintain its aging water infrastructure, especially drinking water systems, operated by State, federal, and local entities.**

  The Governor's Commission on Building for the 21st Century was directed to "study the building and infrastructure needs of California, with the intent of identifying existing critical infrastructure needs and developing a comprehensive long-term capital investment plan for financing public building needs, including responsible financial approaches and efficiency improvements." The commission's interim report in August 1999 outlined findings and recommendations for facilities, natural resources, technology and transportation. The commission recommended $3 billion bond money for critical resources including water, parks, and open space.

  The Water Plan recommends that the State lead an effort, with input from public and private owners of water infrastructure, to identify and prioritize water infrastructure maintenance of key components with regional or statewide significance. This effort should also identify and implement financing strategies for continued public investments in the resulting infrastructure maintenance plan.

- **California needs to define and articulate the respective roles, authorities, and responsibilities of State agencies and local agencies and governments dealing with water.**

  California has a very large and complex water system with a highly decentralized system of governance involving State and federal agencies, thousands of local governments, private firms, and millions of households and farms making important water management decisions and contributing funding to the system. This decentralization has a major influence on daily management, planning, and policy making. Competing and conflicting roles and responsibilities make it difficult to integrate regional water management. Differing roles of the various State and federal governments during planning can also create coordination difficulties. The organizational structure of State government and past practices have led to insufficient communication, coordination, and cooperation among numerous State agencies and departments dealing with water.

  The State needs an internal review of how State resource agencies do business to identify ways to make these agencies more efficient, effective, and responsive to Californians. In light of the growing regional role in water planning and management, the State needs to redefine how to empower and

assist regional water plans and programs. Establishing a cabinet-level strategic water team would strengthen coordination among State agencies dealing with water and ensure their strategic plans and activities are consistent with the Governor's water initiatives and State policy.

- **DWR, in cooperation with other State, federal, local, and research entities, should improve data and analytical tools needed to prepare, evaluate, and implement regional integrated resource plans and programs.**

  Analytical tool and data development for California has not kept pace with growing public awareness of the complexity and interaction between water-related issues. Deficits exist in current analytical capability related to supply reliability and systems issues. A critical issue facing California is the need for better data and tools to produce useful information about environmental objectives, water quality, economic issues, equity issues, and groundwater and surface water interaction. Also, there is a need to better integrate regional and local planning details into statewide studies.

  California needs better data and analytical tools to produce useful and more integrated information on water quality, environmental objectives, economic and equity issues, and surface and groundwater interaction. A consortium of public and private entities, with State leadership and stakeholder input, should prepare a long-term plan to peer-review and improve data and analytical tools, as well as develop presentation and decision-support tools to make complex technical information more accessible to decision-makers and resource managers. DWR should build and maintain the Water Plan Information Exchange (Water PIE), an online information management system, to assist regional and local agencies and governments.

Vision for 2030

California has adequate, reliable, affordable and sustainable water of suitable quality for all beneficial uses to: (1) preserve and enhance the standard of living for 53 million residents; (2) support economic growth, business vitality and the agricultural industry; and (3) protect and restore its unique environmental diversity.

Goals and Objectives

Insert introductory paragraph here differentiating between the purpose of goals and objectives. The objectives will be similar to the recommended actions; the goals will be the desired outcomes and can be associated with one or more objectives. The list of water management objectives shown on the Strategy Investment Options table are now placed in a Box because they related to several goals and objectives. The goals and objectives are shown in a table.

Box 1-xx Water Management Objectives

Table 1-xx Goals and Objectives (under development)

Implementation Plan

Chapter 5 includes a details on implementing, financing and tracking the actions recommended in *California Water Plan Update 2004*. The first section of the chapter includes estimates for implementation costs as well as a discussion of State financing policies, strategies, and actions. The second section details a process for measuring and tracking the success in meeting the water plan's goals and objectives. The final section has a table summarizing components of the action plan for each recommendation, including resources, milestones and implementation challenges.

As a strategic plan, the findings, recommendations, and the action plan presented will be periodically reviewed and revised; DWR will publish five other water plan updates during this document's planning horizon of 2030.

Phased Work Plan

California Water Plan Update 2004 is presented in three phases. Distribution of the public review draft of this five-volume publication marks the end of the first phase. This water plan update is based on the best available data and information and input from an active and diverse advisory committee. It also documents gaps in data and analytical tools.

Phase 2, which began in 2004, provides a final *California Water Plan Update 2004*, which will include revised policy recommendations based on wide public input and numerous public hearings. It also documents the data and analytical tools the Department of Water Resources will use in Phase 3.

In 2005, the Department of Water Resources will begin work on Phase 3, *California Water Plan Update 2008*, which again will include the full participation of a broad advisory committee. DWR will begin to evaluate a set of water-planning scenarios using the data and tools identified in Phase 2, use a water flow diagram to present evaluation results for future wet and dry years, and receive a California Department of Food and Agriculture food forecast for estimating future irrigated crop-water use. DWR will report its findings from these evaluations as they become available as part of the update 2008 process.

Organization

Organized in five volumes, *California Water Plan Update 2004* has the following information in support of the findings and recommended actions:

- The condition of California's water resources and system, including estimates of statewide water supplies and uses, and how water is managed, allocated, used, and regulated in California (Chapter 2 of Volume 1 and details in Volume 3 Regional Reports).
- Significant uncertainties and risks that impact water planning, including extreme hydrologic events like multiyear droughts; several plausible scenarios for estimating future water supplies and uses; a work plan for filling data gaps and improving analytical tools for subsequent phases and updates of the water plan; and an initial estimate of additional water demands by 2030 assuming the continuation of current trends (Chapters 3 and 4 of Volume 1).
- Practices, issues, roles, and strategies for improving regional integrated resource planning and management, including two dozen resource management strategies available to regions to diversify their water portfolios assets (Chapter 4 of Volume 1 and Volume 2 Resource Management Strategies).
- The State's role, responsibilities, and commitments in fostering improved local and regional planning and management, and guidelines for integrated resource planning and providing State assistance (Chapters 4 and 5 of Volume 1).
- Reports on each of the 10 hydrologic regions plus 2 overlay areas, Mountain Counties and Sacramento-San Joaquin Delta (Volume 3 Regional Reports).
- Supplemental articles and information (Volume 4 Reference Guide).
- Documentation on data, tools, and methods (Volume 5 Technical Guide).

Boxes

Table

Box 1-xx Updates of the California Water Plan

The California Water Plan is the State's strategic plan for managing and developing water resources statewide. Since its first California Water Plan, published as Bulletin 3 in 1957, DWR has prepared seven water plan updates, known as the Bulletin 160 series. The Water Code now requires the water plan to be updated every five years; the last update was published in 1998.

Bulletin No. 3 described a comprehensive master plan for the control, protection, conservation, distribution, and utilization of the waters of California, to meet present and future needs for all beneficial uses and purposes in all areas of the State to the maximum feasible extent. It was an ultimate plan that indicated the general manner in which California's water resources should be developed to satisfy the potential ultimate water requirements of the State.

Statewide planning studies to update the California Water Plan have continued since 1961. Each update took a distinct approach to water resources planning, reflecting issues or concerns at the time of its publication.

Implementation of the California Water Plan (1966). The first of the Bulletin 160 series, Bulletin No. 160-66 was a proposed pattern for implementation of specific parts of The California Water Plan as set forth by the California Water Code. Some water policy concerns included flood control and floodplain management, power demands, water-related recreation, the relationship of fish and wildlife to water development, and water quality.

Water for California: The California Water Plan; Outlook in 1970. By 1967 the growth rate of California's population had slowed from that of the 1950s; population projections for 1990 and 2020 were reduced. Irrigated acreage estimates were also reduced, and more accurate information on the consumptive use of crops and the extent of water reuse was available. With projects then under construction or authorized, the report concluded that sufficient water supplies would be available to meet most of the 1990 requirements. The trend toward increasing environmental awareness was noted for both the national and State levels.

The California Water Plan: Outlook in 1974. This report concluded that the status of available supplies was favorable based on the premise that the Auburn, New Melones, and Warm Springs reservoirs and the Peripheral Canal would be operational by 1980. But it was less conclusive about the extent to which supplies would satisfy future needs, considering new California legislation for wild and scenic rivers. Key water policy issues were cooling water for electric energy production, water deficiencies (risk), water exchanges, public interest in agricultural drainage (San Joaquin Drain), water use efficiency (water conservation), economic efficiency (water transfers), and wastewater reclamation.

The California Water Plan: Projected Use and Available Water Supplies to 2010 (1983). More a technical report than previous editions, part of the process included the development of agricultural models applied for the first time. These were used in assessing the general economic effects of increasing water and energy costs. The report quantified the effect of urban and agricultural water conservation measures and the potential for water reclamation as a means of reducing water needs.

California Water: Looking to the Future (1987). Bulletin 160-87 took a broad view of water events and issues in California. The report also discussed several leading water management concerns including water quality, the Sacramento-San Joaquin Delta, and evolving water policies over a wide range. One of its main conclusions was that in roughly three out of four years, California's natural water resources, including rights to the Colorado River, were sufficient to meet all of its water needs for the foreseeable future.

California Water Plan Update: Bulletin 160-93 (1994). This report discussed how population growth, land use, and water allocations for the environment were affecting water resource management. It differed from the five previous water plan updates by (1) estimating environmental water needs separately and accounting for these needs along with urban and agricultural water demands, (2) presenting water demand management methods as additional means of meeting water needs, and (3) presenting separate water balance scenarios for average and drought conditions. This was the first of the Bulletin 160 series to incorporate an advisory committee of representatives of interested parties.

The California Water Plan Update: Bulletin 160-98 (1998). The 1998 update evaluated water management options that could improve California's water supply reliability. By 1995, locally developed water supplies represented 70 percent of California's total developed water supplies. Water management options being planned by local agencies form the building blocks for evaluations performed for each of the State's 10 hydrologic regions. Potential local options were integrated with options of a statewide scope to create a statewide evaluation.

(See fuller descriptions in Volume 4 Reference Guide)

Box 1-xx Legal Requirements for Water Plan Update

The California Water Plan – Update 2004 must at a minimum meet requirements specified in the Water Code about its purpose, content, and process. The advisory committee, extended review forum, and public may suggest to the Department of Water Resources additions to the Water Plan Update that do not conflict with the Water Code.

Purpose

The following excerpts from the Water Code and other legislation address the purpose of the California Water Plan and its updates:

> A long-term, reliable supply of water is essential to protect and enhance California's natural resources and economic climate. (Section 1(a), Chapter 720, 2000 Session Laws)
>
> The plan for the orderly and coordinated control, protection, conservation, development, management and efficient utilization of the water resources of the State, which is set forth and described in Bulletin No. 1 of the State Water Resources Board entitled "Water Resources of California," Bulletin No. 2 of the State Water Resources Board entitled, "Utilization and Requirements of California," and Bulletin No. 3 of the department entitled, "The California Water Plan," with any necessary amendments, supplements, and additions to the plan shall be known as "The California Water Plan." (Section 10004(a))
>
> … The California Water Plan … is accepted as the master plan which guides the orderly and coordinated control, protection, conservation, development, management and efficient utilization of the water resources of the state. (Section 10005(a))
>
> The California Water Plan "does not constitute approval for the construction of specific projects or routes for transfer of water, or for financial assistance, by the state, without further legislative action, nor shall (The California Water Plan) be construed as a prohibition of the development of the water resources of the state by any entity." (Section 10005(b)).

Content

The following excerpts from the Water Code and other legislation address the content of the California Water Plan and its updates:

> Without credible and accurate estimates of water supply needs, it is impossible to ensure that water programs, policies, and investments are appropriate to meet all residential, commercial, industrial, agricultural, and environmental needs. (Section 1(c), Chapter 720, 2000 Session Laws)
>
> … to ensure the state makes appropriate investments in water programs, policies, and facilities, there needs to be a credible and objective assessment of the state's future water supply needs. (Section 1(e), Chapter 720, 2000 Session Laws)

> As part of the requirement of the department to update The California Water Plan … the department shall include in the plan a discussion of various strategies that may be pursued to meet the State's future water needs, including, but not limited to, those relating to the development of new water storage facilities, water conservation, water recycling, desalinization, conjunctive use, and water transfers that may be pursued to meet the future water needs of the state. The department shall also include a discussion of the potential for alternative water pricing policies to change current and projected uses. (Section 10004.5)
>
> The department shall include in the plan a discussion of the potential advantages and disadvantages of each strategy and an identification of all federal and state permits, approvals, or entitlements that are anticipated to be required in order to implement the various components of the strategy. (Section 10004.5)

Recently Enacted Legislation

AB 2587 (Matthews, Chapter 615, Statues of 2002) – Food: Water Usage Forcasts.
Requires the Department of Food and Agriculture to estimate food, fiber, livestock, and other farm products production and provide that information to the Department of Water Resources for estimating related water usage reported in Bulletin 160.

SB 1062 (Poochigian, Chapter 210, Statutes of 1999) - The California Water Plan.
Senate Bill 1062 requires DWR to include various strategies for meeting the state's water supply needs in its updates to the California Water Plan. The update must identify all federal and state permits, approvals or entitlements that might be required in order to implement the strategies. It also establishes an advisory committee to help DWR update the plan.

SB 672 (Machado, Chapter 320, Statutes of 2001) - Regional Planning & Water Plan Update.
Requires the State to include in the California Water Plan, a report on the development of regional and local water projects, within each hydrologic region to improve water supplies to meet municipal, agricultural, and environmental water needs and minimize the need to import water from other hydrologic regions. This bill also requires urban water suppliers to describe in their urban water management plans, water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

SB 1341 (Burton, Chapter 720, Statutes of 2000) - State Water Plan.
Requires DWR to release a preliminary Draft of the California Water Plan's water assumptions and estimates and restructures Water Code Section 10004 relevant to the California Water Plan.

Box 1-xx Analytical Changes

The *water portfolios* and *water balances* in this Water Plan Update include actual data for a recent dry water year, 2001. Planning for drought conditions, extreme and prolonged dry years, is significant for water resources planners, managers, and decision-makers. This drought condition cannot be described by using actual data for a single water year. Previous Water Plans considered drought conditions by using trend-based data from a sequence of dry years.

DWR and AC decided not to use the prior method for forecasting future water conditions, but instead to initiate a phased work plan to develop the data and analytical tools that can analyze multiple *future scenarios* and management *responses strategies*. Consequently, this Water Plan Update does not include quantified water balances for future conditions and a shortage analysis as were presented in prior Water Plans. In the interim, the narratives for three future scenarios can not be compared to forecasts from previous Updates because of significant differences in the method and level of analysis.

Because shortages are location-specific in California, the statewide estimates of potential water supply benefits for the various *resource management strategies* (summarized in Strategy Investment Options table) can not be used to evaluate local shortages. For instance, water supply benefits achieved in an area that does not have a water shortage, may not contribute to reducing a shortage elsewhere. However, the supply benefit may serve other useful purposes in the area it occurs. DWR can evaluate the effectiveness of the resource management strategies at overcoming local shortages after it has quantitatively analyzed the future scenarios and responses.

Box 1-xx Regional Water Planning Principles

1. Use a broad, long-term perspective
2. Identify broad benefits, costs, and tradeoffs
3. Promote sustainable resource management
4. Increase regional self sufficiency
5. Increase regional drought preparedness
6. Promote environmental justice
7. Promote coordination & collaboration among local agencies & governments
8. Use sound science, best data, and local knowledge

Box 1-xx Water Management Objectives

- Integrate & optimize management strategies
- Provide water supply benefits
- Increase drought resiliency
- Improve water quality
- Increase operational flexibility & efficiency
- Improve flood management
- Increase energy generation or reduce use
- Increase recreation opportunities
- Enhance instream, riparian or terrestrial ecosystems
- Reduce groundwater overdraft
- Reduce pollution
- Reduce runoff, drainage or tailwater
- Reduce uncertainty or minimize risk